



# ARTS2510

☯HYfa YX]UHŸ ; Yfa Ub '5

HYfa 'C.bY''##'&\$%-

7 ci fgY`Cj Yfj ]Yk

`GHUZZ7cbhUWhi8YHU]`g`

`7cbj Ybcfg`

B Ua Y	9a Uj`	5j Uj`UV]`]m	@cWUhc b	D\cbY
8Yb]gY`< UbhY`	X"\UbhY`4 i bgk "YXi "Ui	Hi Y`%d%&'cf`Vm Uddc]bha Ybh	A cfj Yb`6fck b &' (	Z`*%f&E`-' , ) \$) - *

GWXcc``7cbhUWhi`bZcfa Uh]cb

GWXcc``cZ<i a Ub]hYg`UbX`@Jb[ i U[ Yg

@cWUhc b. `GWXcc``C Z]WZ`A cfj Yb`6fck b`6i ]X]b[ ž`@Yj Y``&ž&),

CdYb]b[ `<ci fg.`A cbXUm!`: f]XUmž`- Ua `!) da

D\cbY. `Z`\*%&`-' , ) `)%\*, %

: U! . `Z`\*%&`-' , ) `; , +\$)

9a Uj]. [\U`4 i bgk "YXi "Ui](#)

7 ci fgY'8YHJ]`g

7 fYX]hDc]bHg '\*`

Gi a a UfmicZ`hY'7 ci fgY

;` fWd\_ W[SW9 Wd\_ S` 3` ]g` ]XYU` ]Zmci` \Uj` Y`gi` WwggZ` `mUWw`a` d` ]g` \YX` hY` `b`fc`Xi` W`c`fm;` Yfa` Ub`5` `UbX`6`  
W`ci` fgY`g`cfz` ]Zmci` \Uj` Y`hY`Yei` ]j` U`Y`bhc`ZU`mY`Uf`cZ;` Yfa` Ub` `Ub[` i` U[` Y` `Y`Ufb]b[` " `#i`W`b`gc` ]XU`H`g`UbX`  
YI` hY`bX`g`mci` f`df`j` ]ci` g`m`U`W`ei` ]fYX`c`fU` `UbX`k` f]hY`b;` Yfa` Ub` `W`a` a` i` b]W`h]cb`g\_]`g`z`UbX`YI` hY`bX`g`mci` f`  
j`c`W`Vi` `U`fm`UbX`[` fUa` a` Uf`Z`ci` bXU`h]cb`" `H`i` g`z`hY` `W`ei` fgY`Y`b`U`V`Y`g`mci` `h`c` `W`a` a` i` b]W`h] `]b`U`a` c`fY`  
g`d`c`b`U`b`Y`ci` g`UbX`Y`U`V`c`f`U`h`k`Um]b;` Yfa` Ub`" `M`ci` `k`c`f`\_`k` ]h`U` `f`Ub[` Y`c`Z`U`i` hY`b`h]W`Y`U`fb]b[` `a` U`hY`f]U`  
f]Z]W]cbU` `UbX` `b`c`b!`Z]W]cbU`z`c`b` `W`e`b`h`Y`a` d`c`f`U`fm`UbX` \]g`h`c`f]W] `h`c`d]W`g`k` \]W` `d`f`c`j` ]X`Y`g`mci` `k` ]h`Y`I` hY`b`g] ]Y`  
\_`b`c`k` `Y`X[` Y` `UbX`U`V`Y`hY`f`i` b`X`Y`f`g`h`U`b`X]b[` `c`Z`h`Y` `g`c`W`Y`h]Y`g`UbX` `W` `h` `f`Y`c`Z;` Yfa` Ub!`g`d`YU\_]b[` `W`ei` b`h]Y`g`"

7 ci fgY`@YUfb]b[ `Ci hW`a Yg

%` I` b`X`Y`f`g`h`U`b`X` `U`b`X` `f`Y`g`d`c`b`X`]b;` Yfa` Ub` `h`c` `h`Y` `a` U]b` `d`c]b`h`g`c`Z`c`f`U` `UbX`k` f]hY`b` `h`Y` h`g` `X`Y`U`]b[ `k` ]h`  
`h`c`d]W`g`c`Z`V`c`U`X`Y`f`g`c`W]U` `W`e`b`W`f`b`g`Y`b`W`ei` b`h`Y`f`Y`X`]b` `h`Y`;` Yfa` Ub!`g`d`YU\_]b[ `W`e`a` a` i` b]h]Y`g`"  
&" `D`f`c`Xi` W` `g]a` d`Y`z`W`e` \Y`f`Y`b`h`h`Y`I` h`g` `f`c`f`U` `UbX`k` f]hY`b`E`]b;` Yfa` Ub` `c`b` `W`e`a` a` c`b` `h`c`d]W`g`c`f`U`f`Y`U`g`c`Z`  
d`Y`f`g`c`b`U`]b`h`Y`f`g`h`  
' ` " `8`Y`g`W]V`Y`YI` d`Y`f]Y`b`W`g` `UbX`Y`j` Y`b`h`g` `UbX` `d`f`c`j` ]X`Y` `f`Y`U`g`c`b`g`c`f`YI` d` `Ub`U`h]cb`g`z`c`f`c`d]b]cb`g` `UbX`d` `U`b`g`]b`  
;` Yfa` Ub`"  
(` " `F`Y`Z`Y`W`i`c`b` `Y`U`fb]b[ `d`f`c`W`g`g` `UbX` `Y`U`fb]b[ `g`h`f`U`hY`[ ]Y`g`"  
)` " `8`Y`j`Y`c`d`g`h`f`U`hY`[ ]Y`g` `h`c` `W`e`a` a` i` b]W`h]Y` `Y`Z`Y`W]j`Y`m`k` ]h` `c`h`Y`f`a` Ya` V`Y`f`g`c`Z`h`Y`[ `f`c`i` d`"

HYUW`X` ]b[ `G`h`f`U`hY`[ ]Y`g`

H` \Y` `h`Y`U`W`X`]b[ `g`h`f`U`hY`[ ]Y`g`c`Z`c`i` f;` Yfa` Ub` `W`U`g`g`Y`g`U`f`Y` `V`U`g`Y`X` `c`b` `h`Y` `W`e`a` a` i` b]W`h]Y` `Y` `UbX` `h`U`g`\_!`V`U`g`Y`X`  
U`d`d`f`c`U`W`X`z`k` \]W`X`U]a` `U`h[ ]j` ]b[ `g`h`X`Y`b`h`g`c`d`d`c`f`h` b]h]Y`g` `h`c` `d`f`U`W]W` `h`Y`]f` `W`e`a` a` i` b]W`h]cb`g\_]`g`]b` `W`e`b`h`Y`I` h`g`  
h`U`h`U`f`Y` `d`Y`f`g`c`b`U` `m`f`Y`Y`j` `U`b`h`U`b`X` `W`e`b`b`Y`W`Y`X` `h`c` `Y`j` Y`f`m`X`U`m`]Z`" `H`i` g`z`g`h`X`Y`b`h`g` `Y`U`fb`U`j` Y`f`m`U`i` h`Y`b`h]W`i` g`Y`c`Z`  
h`Y`;` Yfa` Ub` `Ub[` i` U[` Y` `W`e`a` V]b`Y`X`k` ]h` `W` `h` `f`U` `UbX` \]g`h`c`f]W] ` \_`b`c`k` `Y`X[` Y`" `H` \Y` `Y`U`fb]b[ `a` U`hY`f]U` `f`d`f]b`h`U`b`X`  
X] ]h`U`E` `UbX` `Y`U`fb]b[ `U`W]j` ]h]Y`g` `f`Y`[" ` " `c`b`]b`Y` `h`U`g`\_g`z`g`a` U` `h`U`g`\_g`#`d`f`c`Y`W`g`]b`g]X`Y` `UbX` `c`i` h`g]X`Y` `h`Y` `W`U`g`g`f`c`c`a` z`  
Z]W]cbU` `UbX` `b`c`b!`Z]W]cbU` `h`Y`I` h`g`E` `d`f`c`j` ]X`Y` `g`h`i` X`Y`b`h`g`k` ]h` `j` U`f]Y`X` `c`d`d`c`f`h` b]h]Y`g` `h`c` `d`f`U`W]W` `h`Y`]f` `f`Y`W`d`h]j`Y` `UbX`  
d`f`c`Xi` W]j`Y` `g\_]`g`z`U`g`k` Y` `U`g` `h`Y`]f`j` c`W`U`Vi` `U`fm`UbX` `V`U`g]W;` Yfa` Ub`[` fUa` a` Uf` `k` Y` `Y`b`W`ei` fU[` Y` `g`h`X`Y`b`h`g` `h`c`  
YI` d`UbX` `h`Y`]f` `f`Y`d`Y`f`h`c]f`Y`c`Z`g`i` ]h`U`V`Y` `Ub[` i` U[` Y` `Y`U`fb]b[ `g`h`f`U`hY`[ ]Y`g`z`UbX` `h`c` `]b`X`Y`d`Y`b`X`Y`b`h`m`d`f`U`W]W` `c`f` `f`Y`j` ]g`Y`  
h`Y`]f;` Yfa` Ub` `g\_]`g`c`b`U` `f`Y`[ `i` `U`f` `V`U`g]g`z`]b`g]X`Y` `UbX` `V`Y`m`c`b`X` `h`Y` `W`U`g`g`f`c`c`a` " `H` \Y` `Ub[` i` U[` Y`c`Z]b`g`h`f`i` W]cb]g`  
d`f`Y`X`c`a` ]b`U`b`h`m;` Yfa` Ub` `f`U`d`U`f`h]Z`f`c`a` `g`c`a` Y`YI` d` `Ub`U`h]cb`c`Z[` fUa` a` U`h]W] `Z`Y`U`h` `f`Y`g`E`g`c` `h`U`h`g`h` X`Y`b`h`g`X`Y`j`Y`c`d`  
h`Y`]f` ]g`h]b]b[ `g\_]`g`" `#` `V`c`h` `Y`W`h` `f`Y` `UbX` `h` `h`c`f]U`g`z`k` Y` `U`f`Y` `i` g]b[ `X]Z`Y`f`Y`b`h` `Y`U`fb]b[ `U`d`d`f`c`U`W`X`Y`g` `UbX` `a` c`X`Y`g`  
c`Z]b`g`h`f`i` W]cb]b`f`d`f`Y`g`Y`b`h]cb`g`z`d`U]f`c`f`g`a` U` `]` `f`c`i` d`k`c`f`\_`z`]b`X]j` ]Xi` U` `U`g`g] ]ba` Y`b`h`g`E` `h`c` `d`f`c`j` ]X`Y`YI` hY`b`g] ]Y` `UbX`  
a` c`f`Y` `c`]g`h]W`c`d`d`c`f`h` b]h]Y`g` `h`c`]g`h`Y`b` `h`c`z`f`Y`U`X`z`g`d`YU\_` `UbX`k` f]hY` `]b;` Yfa` Ub`"

5ggYgga Ybh


fi Vf]WUbX`]bX]j ]Xi U`Wca a Ybty"

5ggYgga Ybh(. 'HYgh

GhUfhXUHY.'

5 hYbXUbW`F Yei ]fYa YbHg

Gh XYbHg`UFY`ghfcb[ `mYbWci fU[ YX`hc`Uhm`bX`U`WUggYg`UbX`fYj`Yk`YW`fY`fYW`cFX]b[ g"

7 ci fgY`GW`YXi`Y`

[J`Yk`WUgg`hja`YhUV`Y`](#)

H]a`YhUV`Y`

8UhY	HmdY	7cbhYbh
K YY_%`%`!` : YVfi Ufm!`&(`UXcd]W : YVfi Ufm		? Ud]hY`%`>WgfWZWgfW.`DYcd`Yz`XfYUa`gž Z]YbXg\]dž`YfcYgž`Udd]bYgg  5i ZH_h/`A`cXi`Y`%
K YY_&.`&`): YVfi Ufm!` A UfW	Hcd]W	? Ud]hY`%`>WgfWZWgfW.`DYcd`Yz`XfYUa`gž Z]YbXg\]dž`YfcYgž`Udd]bYgg  A`cXi`Y`&`!`(`
K YYh`gž`m`A`b]W`Xi`%`g A UfW	Hcd]W	? Ud]hY`&`!` aZ`i`W`W`.`<`ck`dYcd`Y`j`Yž \ca`Y`Ygg`bYggž`YI`hUc`fX]bUfm`c`hY`gž`m`i`b[`UXi`h]Xi`h gh`j`j`]b[`k`h`h`Y]f`dUfYbHg  5i ZH_hž`A`cXi`Y`

		5i žU_hžA cXi `Y%/ `&
K YY_-.;% `5df`!`&% 5df`	Hcd]W	? Ud]hY` ) `3 ^Wb i [^YWWd f eW[ ` .` ]Z`cb[ `YUfb]b[ ž X][ ]hU`a YX]Už`YUfb]b[ `ghUHY[ ]Yg/ `hVWb]ei Yg  GdYU_]b[ `HYghžA cXi ``
K YY_%.&&`5df`!`&, 5df`	Hcd]W	bc `YWñ fY/ `h hcf]U`fĐUghYf`A cbXUm/ `5BN57 8 Unt
K YY_%%`&- `5df`!`% A Um	Hcd]W	? Ud]hY` ) `3 ^Wb i [^YWWd f eW[ ` .` ]Z`cb[ `YUfb]b[ ž X][ ]hU`a YX]Už`YUfb]b[ `ghUHY[ ]Yg/ `hVWb]ei Yg  A cXi `` (žHYgh

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Gi Va ]gg]cb`cZ5ggYgga YbhHUg\_g

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Hi fb]h]b`Gi Va ]gg]cb

≠mci`YbWci bHYf`U`dfcV`Ya`k`Yb`U`HYa`dh]b[`hc`gi`Va`]hmc`i`f`Ugg][`ba`Ybh`h`fci`[`\`Hi`fb]h]b`z`d`YUgY`  
HY`Yd`cbY`9I`HYfbU`Gi`ddcfhcb`-`,`),`'`'`'`%cf`Ya`U]`h`Ya`cb`YI`HYfbU`HY`hgi`ddcfh4`i`bgk`"YXi`"Ui`"Gi`ddcfh`  
`ci`fg`UfY`,`.\$\$Ua`-`-%\$.\$\$da`cb`k`YY`XUmg`UbX`-`.\$\$Ua`-`).\$\$da`cb`k`YY`YbXg`fI`\*)`XUmg`U`mY`UfL`≠mci`  
UfY`i`bUV`Y`hc`gi`Va`]hmc`i`f`Ugg][`ba`YbhXi`Y`hc`U`ZU`hik`]h`Hi`fb]h]b`mci`a`Um`Udd`mi`Zc`f`Ub`YI`HYbg]cb`z`Vi`hmc`i`  
a`i`ghfY`hU]b`mci`f`h]W`Yhbi`a`VYf`Zca`9I`HYfbU`Gi`ddcfhfU`cb[`k`]h`Ubmc`h`Yf`fY`Yj`UbhXcW`a`Yb`hgL`hc`  
]bWi`XY`Ug`Yj`]XYbW`hc`gi`ddcfhmc`i`f`YI`HYbg]cb`Udd`]W]h]cb"≠mci`Ya`U]`9I`HYfbU`Gi`ddcfhmc`i`k`]"`

## 5 WUXYa ]W<c bYghmUbX`D`U[ ]Uf]ga

D`U[ ]Uf]ga `]g`i g]b[ `hY`k cfXg`cf]XYUg`cZchYfg`UbX`dfYgYbh]b[ `hYa `Ug`mci f`ck b" `hWUb`hU`Y`a Ubm  
Zcfa gž`Zca `XY`]VYfUHY`WXYU]b[ `hc`UWV]XYbhU`mW`dm]b[ `Zca `U`gci fW`k ]h`ci hUW\_bck`YX[ Ya Ybh`

I BGK `[ fci dg`d`U[ ]Uf]ga `]bhc`hY`Zc`ck ]b[ `WUHY`[ cf]Yg.

7 cdm]b[ .`i g]b[ `hY`gUa Y`cf`j Yfmg]a ]Uf`k cfXg`hc`hY`cf][ ]bU`hYI hcf]XYU`k ]h`ci hUW\_bck`YX[ ]b[ `hY`  
gci fW`cf`i g]b[ `ei chU]cb`a Uf\_g" `H\]g`U`gc`Udd`]Yg`hc`]a U[ Ygž`UfhUbX`XYg][ b`dfc`YWgž`Ug`k Y`U`g  
dfYgYbhU]cbg`k \YfY`gca YcbY`dfYgYbh]g`UbchYf`g`]XYUg`cf`k cfXg`k ]h`ci hW`YX]h`

hUddfcdf]UHY`dUfUd`fUg]b[ .`7`U`b[ ]b[ `U`ZYk`k cfXg`UbX`d`fUgYg`k`Y`a cghmifYU]b]b[ `hY`cf][ ]bU`  
ghfi W`i fY`UbX`#`f`dfc[ fYgg]cb`cZ]XYUg`cZ`hY`cf][ ]bU`ž`UbX`]bZcfa U]cb`k ]h`ci hUW\_bck`YX[ Ya Ybh`H\]g`U`gc  
Udd`]Yg`]b`dfYgYbhU]cbg`k \YfY`gca YcbY`dUfUd`fUgYg`UbchYf`g`]XYUg`cf`k cfXg`k ]h`ci hW`YX]h`UbX`hc  
d]YW]b[ `hc[ Y`hYf`ei chYg`UbX`dUfUd`fUgYg`]bhc`U`bYk`k \c`Yž`k ]h`ci hUddfcdf]UHY`fYZYfYbW]b[ "

7 c`i g]cb.`k cf\_]b[ `k ]h`chYfg`Vi hdUgg]b[ `cZ`hY`k cf\_]Ug`U`dYfgcb`g`]bX]j ]Xi U`k cf\_]7 c`i g]cb`U`gc  
]bWi XYg`dfcj ]X]b[ `mci f`k cf\_]hc`UbchYf`gh`XYbhVYZc`fY`hY`Xi Y`XUHYž`cf`Zc`f`hY`di fdcgY`cZ`hY`a

- i bXYfghUbx'mci f'f][ \hg'UbX'fYgdcbg]V]h]Yg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[ ]Uf]ga ž'Wc'dmf][ \hž' BGK 'Gh XYbh7cXY'cZ7cbXi W'Ubx'5W'W'dhUV'Y'I gY'cZ I BGK '⇒H'F'Ygci f'W'g'Dc`]W'h
- VY'Uk UfY'cZ'Y'ghUbxUfXg'cZVY\Uj ]ci f'YI dY'W'X'cZYj Yfmcby`]b'h'Y'I BGK 'W'a a i b]m
- 'cW'W'h'gYfj ]W'g'UbX' ]bZ'fa U]cb'UVci hi BGK 'UbX'I BGK '@]VfUfm

Gca Y'cZ'Y'gY'UfY'Ug'k ]''VY'ZJa ]]Uf'hc'mci ž'c'h'Y'fg'k ]''VY'bYk "'; U]b]b[ 'U'gc`]X'i bXYfghUbx]b[ 'cZU''h'Y fY'U'Y'X'UgdY'W'g'cZ9@-G9'k ]''\Y'd'mci 'a U\_Y'h'Y'a cgh'cZ'mci f'gh X]Yg'Uhl BGK ""

[\h'hd.##gi V'Y'W'f'i \]X'Y'g"'\]VfUfm'i b'gk "Y'X'i "U'i #' \]g'Y'#\]V'c'i h' \]g'Y](#)

5 WUXYa ]WbZcfa Uh]cb`

: cfYggYbh]U`ghi XYbh]bZcfa Uh]cb`fY`Uh]b[ `rc.

- fYei Ygh]Zc`fYI hYbg]cb/
- `UhY`gi Va ]gg]cbg`[ i ]XY`]bYg/
- fYj ]Yk `cZa Uf\_g/
- I BGK `<YU`h`UbX`GUZY`mdc`]WYg/

